GrummanWorld

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Grumman Wins Space Station Support Contract

Company to support space station design and development for NASA; contract potential is $1.2 billion

On July 2, the National Aeronautics and Space Administration announced that Grumman had been awarded a contract to support the design and development of a space station.

The contract, which is being negotiated, has an estimated value of $840 million for a period of more than 10 years. With a priced option of $406 million, the total could reach $1.2 billion.

As space program support contractor, Grumman will assist NASA in the overall integration of the project, including evaluation and management of four companies that will be selected to design and build a manned space station. The support contractor will also develop test requirements for verification, assembly and overall integration of space station components.

"Space played a major role in Grumman's past," said Grumman Chairman Jack Bierwirth, "and it is important to our future. We stepped up our effort to increase our share of the space business and the program support contract is a vital link."

Grumman has established a new operating unit for the program, Grumman Space Station Program Support Division. The division will be headquartered in Reston, Virginia, where NASA is locating offices for its space station operations, and will have additional offices at major NASA sites. Other offices may be selected sites in several foreign countries. Employment will average over 1,000 engineers and technical specialists.

Fred Haise Jr. will head the new Grumman division. He had been president of Grumman Technical Services Division. A former Apollo astronaut, Haise has more than two decades of experience in manned space programs. He joined Grumman in 1978 as vice president for space programs.

Grumman leads an industry team that includes Ford Aerospace & Communications Corporation, Detroit, Michigan; Booz, Allen & Hamilton, Bethesda, Maryland; and Wyle Laboratories, El Segundo, California.

The team will support the NASA space station program office in program control and management, information systems, operations, program requirements and assessment, utilization, systems engineering, safety, reliability, quality assurance and international integration.

Ford Aerospace & Communications Corporation has achieved prominence as both a manufacturer of telecommunication satellites and in the engineering and integration of complex command and control systems for the U.S. space program. Over two-thirds of the world's overseas telecommunications traffic and domestic telecommunications services for 25 countries rely on Ford Aerospace satellites; 77 have been launched to date. Ford Aerospace also operates America's primary military and civilian space/ground command and control networks.

Booz, Allen & Hamilton is a recognized leader in professional and engineering services. Its technology centers provide management services to the system acquisition process in support of major government programs. Such support to NASA dates to 1963. Booz, Allen & Hamilton currently supports NASA in a wide variety of programs, including the space shuttle and space station.

Wyle Industries established its reputation in engineering testing for the aerospace and defense industries. Wyle has developed a computer software program to support planning and scheduling of scientific experiments on board the space station. Wyle currently supports NASA Marshall Space Flight Center in material processing experiments.

Grumman's long history in the manned space program includes designing and building the lunar module that safely landed Americans on the moon. The company also builds the space shuttle orbiter wings and manufactured the shuttle training aircraft. Grumman has joined with two industry teams to bid on different components of NASA's space station project.■

State Of The Planet. *At Grumman-CTEC in McLean, Virginia, software engineer Janine Vercoe operates a Grumman-developed command, control, communications and intelligence (C^3I) workstation. This defense system can show maps of the entire world and the location of friendly, enemy, and neutral forces. Using the 'mouse' remote control at her right, Vercoe puts commands on the screen and selects from them. She can quickly zoom in or switch to another area entirely. Vercoe can also call up defense data about the places and forces shown. (Photo by Rich Breunig)*

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To Tap Or Not To Tap? That Is Question In '87

Spuds McKenzie wouldn't show up at a lot of after-hours picnics this year. This party animal loves to quaff a few brewskies. However, several Grumman departments have decided to sponsor dry picnics this summer.

In March, a new corporate policy concerning consumption of alcohol at company-sponsored events went into effect. The policy applies to all events sponsored by Grumman as well as to non-Grumman gatherings held on company property.

The decision to serve wine and beer at department picnics is up to the management who is planning the event, says Bob Bradshaw, Grumman vice president and secretary. "They have three choices. They can hire an outside caterer who is licensed to dispense. They can accept the responsibility themselves and make sure that no one under the legal age is served, and no one is served too much. Or, they can decide not to serve alcohol at all."

However, if they decide to serve wine and beer, the monitors or servers should accept responsibility that no one under age and no one who has had too much to drink are served since that could lead to serious legal action, says Bradshaw.

By far, the most popular site for department picnics is McKay Field in Bethpage. The field is booked almost every night during the summer. A beer-only rule has been in effect the past few seasons. So far this season, two out of 10 picnics have served beer.

On June 24, the annual EA-6B program picnic drew 335 people. "We hired a licensed caterer and their 10 people did everything from serving the beer and food to cleaning up afterwards," says Toni SantaMaria, EA-6B program administrator. Tickets went for $10.

Quality Operations' picnic committee labored over the decision whether to serve beer or not. "We didn't want to put anyone in the position of being liable, since over 500 people usually come to our picnics," says Mike Vecchia, assistant to the vice president. "We did shop around for an outside caterer. There are a lot of catering firms, but they want a turnkey arrangement. They want to supply the food, serve the beer and clean up. This brings up the cost to $15 or so. That's a lot of money."

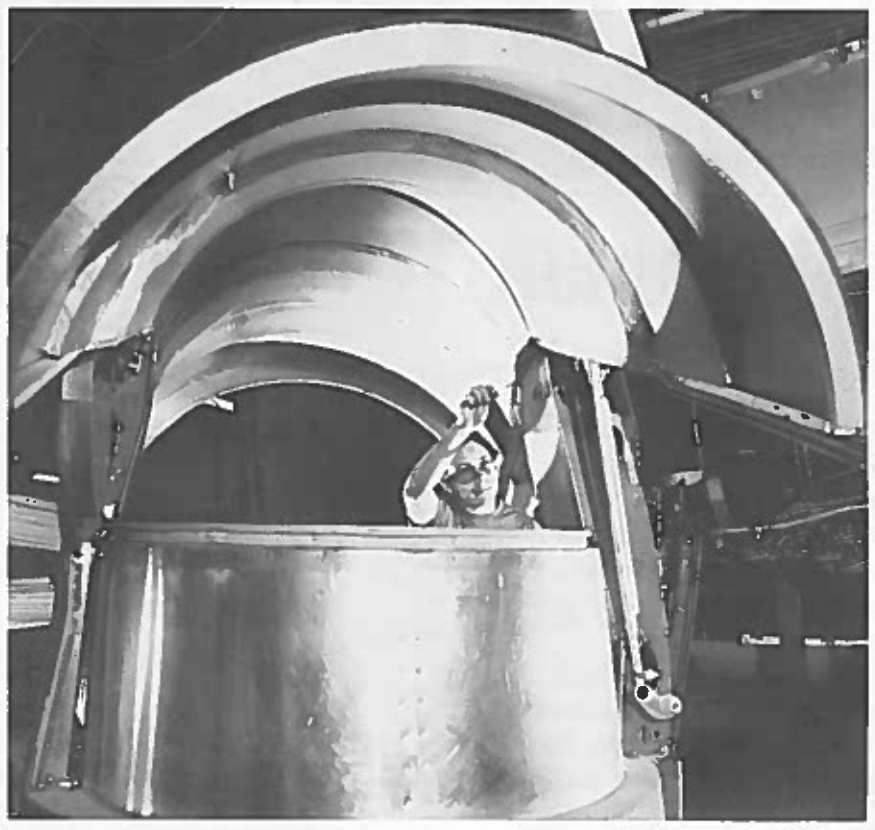
The committee settled on a no-beer picnic for $5 a head. The menu was spruced up to include such items as fresh fruit baskets and extra salads. "I thought if only about 100 or so people came, that would mean the end of our picnics," says Vecchia. "We knew we were not going to get the same turnout as last year. However, over 300 people came."

Even though it was a cool, damp night, the picnic was successful. "Of course, there is something about having a hotdog and a beer," says Vecchia. "But everybody has become much more conscious about drinking. No one wants to get pulled over for DWI. Next year, we'll probably not serve beer and jazz up the menu some more."■

Summer Break

Only one issue of *Grumman World* will be published this month, so that staff members can go on vacation.

The *Grumman World* office will remain open, so if you have a suggestion for an article, call us on Ext. (111) 53293. The next issue will be distributed August 14.



Getting Into His Work. *At the Commercial Development Center in Bohemia, Long Island, Andre Berghmans adjusts the linkage on the G-IV/F-100 thrust reverser aft cowl assembly mockup. The mockup is used for follow-on projects; Grummanites in Stuart, Florida, are now producing the thrust reversers and nacelles for Fokker's F-100 medium range passenger transport and Gulfstream American's G-IV executive jet. Both are powered by the Rolls-Royce Tay engine. (Photo by Rich Breunig)*

Where To Donate Blood This Summer

Now that summer is here, your blood donation is needed more than ever. Blood donations traditionally fall during the summer months, because many people go off on vacation and forget to give blood. Here is where Grumman will be holding blood drives this month.

Date	Location	Time
July 14	Bldg. 14	9 a.m. — 2:30 p.m.
July 16	Bldg. 235	8:30 a.m. — 2 p.m.
July 21	Bldg. 237	9 a.m. — 2:30 p.m.
July 22	Bldg. 237	9 a.m. — 2:30 p.m.
July 23	GHQ	9 a.m. — 2:30 p.m.
July 27	Bldg. 239	9 a.m. — 2:30 p.m.
		6 — 9:30 p.m.
July 29	Bldg. 3	8:30 a.m. — 2 p.m.

Grumman Boats Going After Big Fish

This month Grumman Boats will start production of its new "Big Water Series" of aluminum fishing boats in Marathon, New York.

The 22-foot-3-inch boats are designed to be tough enough to tackle the rough waters of large natural and man-made lakes, particularly the Great Lakes.

"The Big Water Series fills the gap in this market segment," says Bob Steinway, president of the Grumman Boats unit of the Allied Division.

There are three boats in the series. One is a Cuddy (a nautical word meaning a small cabin on a ship) cabin, the second has a closed bow deck for extra storage and the third has a center console.

The boats' 101-inch beam is an important selling point, because the legal limit for trailerable boats is 102 inches.

"A lot of people trailer their boats," says Steinway. "It is difficult to do that with a 22-foot fiberglass boat because it is so heavy."

Aluminum boats offer other advantages. "They are less expensive than comparably sized fiberglass boats," Steinway adds. "The aluminum boat requires a smaller engine to go as fast as the fiberglass boat, so the end price is brought down."

The new boats are rated for engines up to 240 horsepower. A prototype powered by a 165-horsepower inboard/outboard was clocked at 49 miles per hour.

"Out on the Great Lakes they fish for salmon that run from 15 to 25 pounds, so you need a bigger boat," says Steinway. "Boats on the Great Lakes face conditions much like those on the ocean. A 22-foot boat is an acceptable size. Smaller boats have to stay close to shore."

Grumman has been testing a prototype Big Water boat for over a year, and it has proved itself to be tough. In one incident, a Coast Guard boat intercepted the prototype as it was heading out during an especially bad storm. Winds were reaching 42 knots, about 48 miles per hour.

"The Coast Guard said to the Grumman crew, 'Where do you think you're going?' " says Steinway. They explained that it was a new boat design and that they wanted to test it in rough water. "The Coast Guard told them, 'We think you guys are crazy, but if you're going to go out we'll follow you.' They were amazed by the performance of the boat. It rode the tops of eight-foot waves and ran troughs very well."

Steinway is hoping the new boats will navigate the market just as well. He estimates sales of about $2.5 million the first year.

Grumman Boats sales have been growing significantly in the past several years, due mainly to the introduction of a number of new fishing boat models and the successful line of pontoon party boats.■

Tickets To The July 25 Grumman Family Picnic At Calverton, L.I., Are Now On Sale At All Employee Services Offices

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Norine Lyons
Manager - Internal Communications
575-3720

Kathleen Housley
Editor — 575-3293

Associate Editors
Bob Sample — *575-5118*
John Vosilla — *575-5119*

Bernadette Gately
Editorial Assistant — 575-4334

An Interview With Electronics Systems President Bob Nafis

'A Good Idea Too Soon Or Too Late Is No Good At All'

Grumman World *recently interviewed Electronics Systems Division President Bob Nafis as part of its continuing series of interviews with top Grumman officials.*

The Electronics Systems Division designs, manufactures and integrates sophisticated electronics for aircraft, computerized test equipment and other defense and commercial products. It is headquartered in Bethpage, but it has people working in Bohemia, Melville and Great River, L.I.; Salisbury, Maryland; Houston, Texas; Plainsboro, New Jersey; and Benton Park, Pennsylvania.

Grumman World: *How is Electronics Systems faring in 1987?*

Nafis: In spite of Gramm-Rudman we are not lacking for opportunities. We are in the great position to be able to decide not to bid some things because we already have enough to do. Right now we're on a roll. We'll do over $350 million this year and we hope to be over $750 million by 1991. This year and next are going to determine whether we picked the right things to work on.

GW: *What are some of the challenges facing Electronics Systems?*

RN: We're trying to expose Grumman people to the things that we're doing.

As it should be, most people have their heads down and their wheels up and locked and are doing their jobs. They see the same people, they deal with the companies that they've normally dealt with. They don't really know what's going on in other places within Grumman.

People look at other companies and think they see 10-foot giants. The unknown is always given more credit than the known. So we've got an important piece of marketing to do to show other divisions our capabilities.

This is true for us, too. Just getting out to other divisions to see what their capabilities are and the

'Management should provide support, advice, suggest an idea when none is obvious.'

enthusiasm of their people can itself create an idea that can lead to other things.

Grumman is a changing culture and it's a good thing because the world outside is changing rapidly. The company is expanding its base of customers.

The military services are demanding leader/follower arrangements; they are interested in maintaining competition through the production phase.

Our aim is to keep all the good things that we have — particularly the personal relationships at work in the company. And, at the same time, we must adapt to the changes in the outside world.

We've got some great competition. They have a lot of good people, but I just happen to believe that we've got some better ones inside Grumman.

GW: *How do you keep a good relationship with the people in the division?*

RN: I'm a believer in "walkabout management." I like to visit our sites and talk to people there. I do that pretty often. I'm not much on formal presentations; I prefer to communicate one-on-a-few. I want to make believers in the business unit concept out of our leaders, then get them to work with their next echelon and so on.

GW: *What do you mean by "make believers" out of them?*

RN: Instill commitment to the business unit and product. I want to get people to really care about doing a job right because they don't want to let their friends and co-workers down.

There is always satisfaction in winning, succeeding, achieving. We have to give everyone a sense of that. You can walk around and see some long faces because we haven't won certain contracts, but we don't have to win everything. We just have to win enough to keep growing profitably. Picking the right things to work on is important.

GW: *What markets is the division pursuing?*

RN: Grumman has been heavily involved with electronics for a number of years. At the same time, the military's need for more sophisticated electronics has grown dramatically. So, there are a number of business areas where Electronics Systems can grow. We've organized the division into eight strategic business units, each with a specific niche based on our skills.

We started out with Program Products, which is

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interdivisional work, Industrial Products, Test Equipment Products and Systems, Grumman Houston, and Display and Trainer Systems. They were the basis of the division when it was formed in 1985.

Since that time we have formed Guided Weapons, Components and Microwave, and Tachonics.

So many of our products and services are new or yet to hit the market. We are at a transition stage — the company, the country, and the technology. The company is trying to streamline and get its skills-mix in line with the business coming along. Our customers are putting a lot of pressure on all the contractors to cut prices to the bone. We are trying to apply new technologies like gallium arsenide, very large scale integrated circuitry, and optoelectronics.

GW: *How much independence do you give each of the vice presidents who run these units?*

RN: Each of the strategic business units is a profit center. I tell the vice presidents to think of their SBUs as their own businesses. They can attack their marketplace, end to end.

Most of the product-related work is done at the strategic business unit level. At the division level we are facilitators. I keep as small a headquarters staff as possible. My job at headquarters is to run interference for the vice presidents. I want to eliminate as many obstacles as I can for them so they are free to do their own product planning, research and development, design, manufacturing and marketing and to relate with the people who are going to build the products. We set goals for each unit. If they have problems with another division, it's my job to solve them. It's their job to go develop the products and sell them.

GW: *Which area does the most business right now?*

RN: Program Products accounts for about 55 percent of our volume. This group provides hardware and cable and harness fabrication for Grumman Aircraft Systems, Space Systems, and Melbourne Systems. Based on today's projections, it'll be about 30-35 percent of our business by 1991.

GW: *So you foresee a growth in external contract work?*

RN: Definitely. For instance, we've got a very significant amount of automated test equipment work. In the next decade, we'll be doing as much work in this area — Test Equipment Products — as in Program Products. The major growth product will be Intermediate Forward Test Equipment, or IFTE, the U.S. Army's next generation of automated test equipment.

In addition, we've just submitted a proposal to the Air Force to support the A-7s in the Air National Guard.

GW: *What area do you see becoming the major element in Electronics Systems?*

RN: We see all our business units as significant elements unto themselves. They will surge at different periods of time.

For example, in Guided Weapons, we're focusing on three categories: missiles, robotics and remotely-piloted vehicles (RPVs). This group was recently formed.

In robotics, we have just submitted a proposal to the Army called TMAP: Teleoperated Mobile Antitank Program. We hope to win a proof of principle competition this month. In this field, Grumman has pioneered the fiber-optically guided robotic weapon.

We are also teamed with Northrop and competing against Boeing and Kearfott on a program called the IGTD — the Inertially Guided Technical Demonstrator — for a joint Air Force/Navy program. IGTD is a "smart bomb," an inertially guided bomb that would be dropped from a plane but would be much more accurate than a standard bomb.

In addition, we are active in the tactical missile arena. We are working closely with Grumman Aerostructures on the air-to-surface Penguin missile, which has been built in Norway and marketed by Grumman in the United States. We're devising future modifications for it. We are also looking at bidding on the next generation Navy standoff weapon called the Advanced Intermediate Weapon System.

GW: *What is Grumman's future in trainers and simulators?*

RN: It's a growing operation. In the next decade it will be one of our big sales pieces, because that's when production options of the A-6F and F-14D simulators begin. We recently won a major contract to manage that job. We're not building them, but our part of the program is still substantial.

One program called AMTESS, which is short

'I tell the vice presidents to think of their SBUs as their own businesses. They can attack their marketplace, end to end.'

for the Army Maintenance Trainer Evaluation Simulation System, has taken some time to gestate. It involves a more economical and safe way of simulating trainers instead of using real hardware. Using software to simulate a maintenance trainer is a new concept that is slowly being accepted by the services.

The Army likes AMTESS and recently we have gotten indications that this program may become reality in the fiscal 1988 time frame.

(Continued on page 4)

Nafis: We Must Adapt To The Changes In The Outside World

(Continued from page 3)

We're also researching and developing a generic workstation called virtual crew station. That looks like it has a bright future. You can reconfigure the workstation with software to simulate an aircraft operator's position, a tank command station, a ship workstation or any crew station on land, sea or air.

We are under contract with the Patuxent River Naval Air Test Center to create a propulsion model for the F-14A+ engines and then we will update one of their flight simulators.

GW: *What types of components is Electronics Systems developing?*

RN: Many of our components — or subsystems — were first developed in conjunction with Aircraft Systems in the Engineering Development Center. The keys to success are how we package these circuits in smaller pieces and the technology that's involved. By bringing down the size and weight, eventually we'll have a cost advantage.

Right now we're building the digital entry keyboard system which is being applied to the F-14D and the A-6F. Several other airframe manufacturers are interested in it. We are also studying the high speed data bus that was developed to interconnect the labs in the Engineering Development Center. We have some ideas to make it even faster and package it as a complete network. We have a programmable blanker product that's used to protect transmitters and receivers from damage when they are operating in the same frequency. We also have some weapons control products.

GW: *Microwave is a relatively new field for Grumman. Could you explain what this field involves?*

RN: Microwave involves radar, communications, sensors, and electronic warfare devices. Our work is still in the R&D stage. We have several development contracts.

GW: *One of those new business areas involves Tachonics. What is Tachonics' relationship to Grumman?*

RN: Grumman financed the creation of Tachonics, though it will become privately owned eventually. We needed access to gallium arsenide-based circuits, which have a lot of capabilities in certain frequencies, in radiation hardness and resistance to heat that are impossible with silicon circuits.

Under our agreement with Tachonics, we have guaranteed access to the technology and to a percentage of the production facility, but it will also sell outside to other people.

GW: *Why didn't we buy the circuits from someone else instead?*

RN: The circuits were not readily available. And, the people who had them were not particularly interested in giving Grumman access to them.

'We see all our business units as significant elements unto themselves. They will surge at different periods of time.'

GW: *Once Tachonics becomes independent, will we still have guaranteed access?*

RN: Yes, for a period of time. After a while, it won't be necessary any more. There probably will be others who will have circuits to sell to us that we could put together to do the special things that we want to do.

GW: *How would you rate their performance so far?*

RN: Terrific! They're on schedule, and we have been getting better yields and physical performance than we had reason to expect at this point in time.

GW: *Why did Electronics Systems get involved with Industrial Products?*

RN: We created this group to manufacture electronic products from designs supplied to us by other companies.

The people are doing quite well at making products of the highest quality at a competitive cost. For instance, IBM is our biggest customer and they keep coming back.

But in the field of build-to-print contract manufacture, we're marketing the quality of our low-cost, very large scale production capabilities at Great River, Houston, Salisbury and Benton Park.

GW: *Most of the program and industrial products work had been performed at Great River on Long Island, but now much of the work is moving off the Island. Why?*

RN: We established an operation in Salisbury (Maryland) to work on wire and cable assemblies. They're right on track on our learning curve and our quality curve.

We're establishing a facility in Benton Park (Pennsylvania) to manufacture printed circuit boards. We're moving the automated printed circuit

production equipment from Great River to Benton Park. We're also going to add a new facility there to build both digital and microwave circuitry. Our electro-optic work will also be done there.

There was no way that we could house all that in Great River. This year, we've added 50,000 square feet of laboratories and offices at Great River. The moves' objectives were to free up space in Great River so that we can do more final assembly work there. We've got a significant production requirement for automatic test equipment. We are chockablock at Great River.

GW: *Was it more economical to move the work to new facilities?*

RN: We had to clear some work out of Great River in order to build the things that we wanted to build there. The question could have been why didn't we go to the next Long Island town and build a building there. That wouldn't have been prudent because we can get a better business proposition in some other places.

But we're not reducing our staff. We did feel a ripple during the reduction-in-force. But we do have lots of work planned for the staff at Great River.

GW: *What role does Grumman Houston play?*

RN: Houston has carved out a niche for itself in the containerization of electronics. A lot of box work and structures are built there. We plan to do the final assembly in Houston of the IFTE basic shops — that's the unit that will be carried on the back of a two-and-a-half ton truck that army technicians will work in near the battle lines. We will probably also do our final assembly, should we win a production contract, of the Teleoperated Mobile Antitank Program in Houston. Should we do volume missile production, which we hope to do, we will probably do that in Houston.

To fill the gaps, Houston is aggressively going after other big programs. They have been building containerized hospital facilities and sanitary systems that are all part of the Navy's base hospital operations. They are also doing subcontract work for Aircraft Systems and Space Systems. They've got a good capability and they're very competitive. They shift to new work quickly.

GW: *What is the philosophy you want the people in Electronics Systems to have?*

RN: It's the same thing I say to college kids: take as much responsibility as you can handle and expect to make small mistakes that you can learn from. There is an old adage that goes, "He who isn't making mistakes isn't doing anything." I've been fortunate because I have come in contact with some great people in my Grumman career who allowed me to get in over my head until the bubbles were rising to the surface and then helped me out. The company grows as fast as its people grow.

GW: *You've been with Grumman nearly 40 years. What is the one achievement you are most proud of?*

RN: The people I have known at Grumman have given me a lot of satisfaction. But, if you want one thing...for a young guy the day Grumman was

'People look at other companies and think they see 10-foot giants. The unknown is always given more credit than the known.'

awarded the A2F (editor's note: A2F was the original designation of the A-6A Intruder) development contract. That probably was a major turning point for the whole company and I felt I made a contribution to that. I was the chief electronics/systems designer.

In my Data Systems days, it was when InfoConversion made it and we got the Institute turned around. But I never did get Grumman Data Systems to where I wanted. It seems like for every buck we got from outside work, the inside work just grew and grew and we couldn't go get more outside contracts.

GW: *What is your own management philosophy?*

RN: Management should provide support, advice, suggest an idea when none is obvious. I appreciate variety in our group leaders' management styles and let them run their operations the way they think is best. It's no good to clone one type of manager. We agree on goals and I judge along those lines. And if we fail, I look at why so we don't make the same errors twice.

One of the lessons I've learned is that timing is everything. A good idea too soon, or too late, is no good at all.

GW: *Is there a special quality you look for when you staff a program?*

RN: To be successful, we have to be broad-based and creative. The people in Electronics Systems can't be so specialized that we have to pull together a committee of 25 people to work on one project. You can't get anything done that way.

I like people who can understand what is going on in other disciplines. Our product designers have to be conscious of the economic impact of what they design. You don't design a circuit then hand it through a window and it comes out the other side a finished product. You can't design something that the shop says is too expensive to build. You also can't have the engineer working on a related circuit saying he has trouble with the way your circuit and his circuit connect.

But you should also be able to show that things somebody says are impossible can be done and are worth doing your way. For example, a guy on one project came up with a component part design that one shop said couldn't be built. Well, he took the thing home and built it in his own shop in the garage over a weekend. That's the kind of guys we have and we need: to understand design, manufacturing, and the economic impact of everything they do. That goes for the head of each strategic business unit on down.

In today's competitive environment, performance, reliability and all the other "ilities" are credited to everyone. Price wins.■

Go Back To School — Tuition's On Grumman

Rodney Dangerfield may have gone back to school on his own expense account, but you don't have to.

As a Grummanite, you are entitled to participate in Grumman's Tuition Reimbursement program. This program reimburses you for your tuition outlay for college courses approved by Grumman, if you make the grade.

According to Lorraine Alfino, program administrator, good grades bring financial rewards. An A nets the recipient a 100 percent refund while B's earn 85 percent back and a C entitles the student to a 75 percent refund. Anything lower is not reimbursed.

This system requires an initial investment by the students. They lay out the money up front and then the company reimburses them when grades are in.

The corporate program is open to people from all Grumman divisions except Grumman Allied, Grumman Technical Services and Grumman St. Augustine. These divisions operate their own programs. You don't have to be pursuing a specific degree in order to be reimbursed.

"We reimburse on a course-by-course basis," says Alfino. "We find that if you limit the program to people going for degrees, you won't be helping the others who may just be taking a course or two to help them at their jobs."

Universities can also make going back to school easier. Many offer credits for life experience, thus enabling people to get a step ahead. Adelphi University's ABLE program is one example, as is Hofstra University's Life Experience program. However, Grumman does not reimburse for life experience credits.

Checking It Out. *Charlie Birsner, a numerical control machinist in Building 2, is pursuing his associate's degree at SUNY—Farmingdale. He hopes to continue on for his bachelor's — with the aid of tuition reimbursement.*

One student who has used tuition reimbursement to her advantage is Thelma McClendon, a data analyst at Grumman St. Augustine. McClendon applied for tuition reimbursement for several courses while pursuing her bachelor of science degree in business administration from Bethune-Cookman College, Daytona Beach, Florida.

McClendon, a single parent with six children, found it difficult to pursue a degree, work full time, and raise six kids, but she managed. "It was quite a task," she says, "but I was determined to succeed."

She's gearing up for the challenge again. McClendon will pursue her master's degree at the University of North Florida in Jacksonville this fall. She hopes to get as much of her tuition reimbursed as possible. "It helped a great deal," she says.

Other Grummanites agree. "Tuition reimbursement is a real motivator when you know you're going to be getting more money back for a good grade," says Lynda Wakulinski, a senior electrical installer in Building 4, Bethpage.

Wakulinski is pursuing an associate's degree in industrial technology at Nassau Community College. She has taken 12 credits, and estimates that it will take her four years to complete the program.

Charlie Birsner, a numerical control machinist in Building 2, Bethpage, also finds that the system makes him work harder. "It motivates me to go for that A and get fully reimbursed," he says.

Birsner is pursuing an associate's degree, in mechanical engineering. He attends SUNY—Farmingdale, and plans on spending the next four years working toward his degree.

They were both thinking along the same lines when they decided to go to college. "I wanted to go back to better myself and further my career. I also know that I have the potential to do more than I do," Wakulinski says.

"No one actually told me I needed a degree but if you go out into the job market or look on the job opportunity bulletin you see a lot of jobs do require a degree in some field," says Wakulinski.

"I was working nights, and I had a lot of free time during the day. I didn't want to sleep all day, so I decided to go to school, seeing that Grumman would help me out with financial aid," says Birsner.

"I figured that going to school would make it better for me and for the company as well," he says.

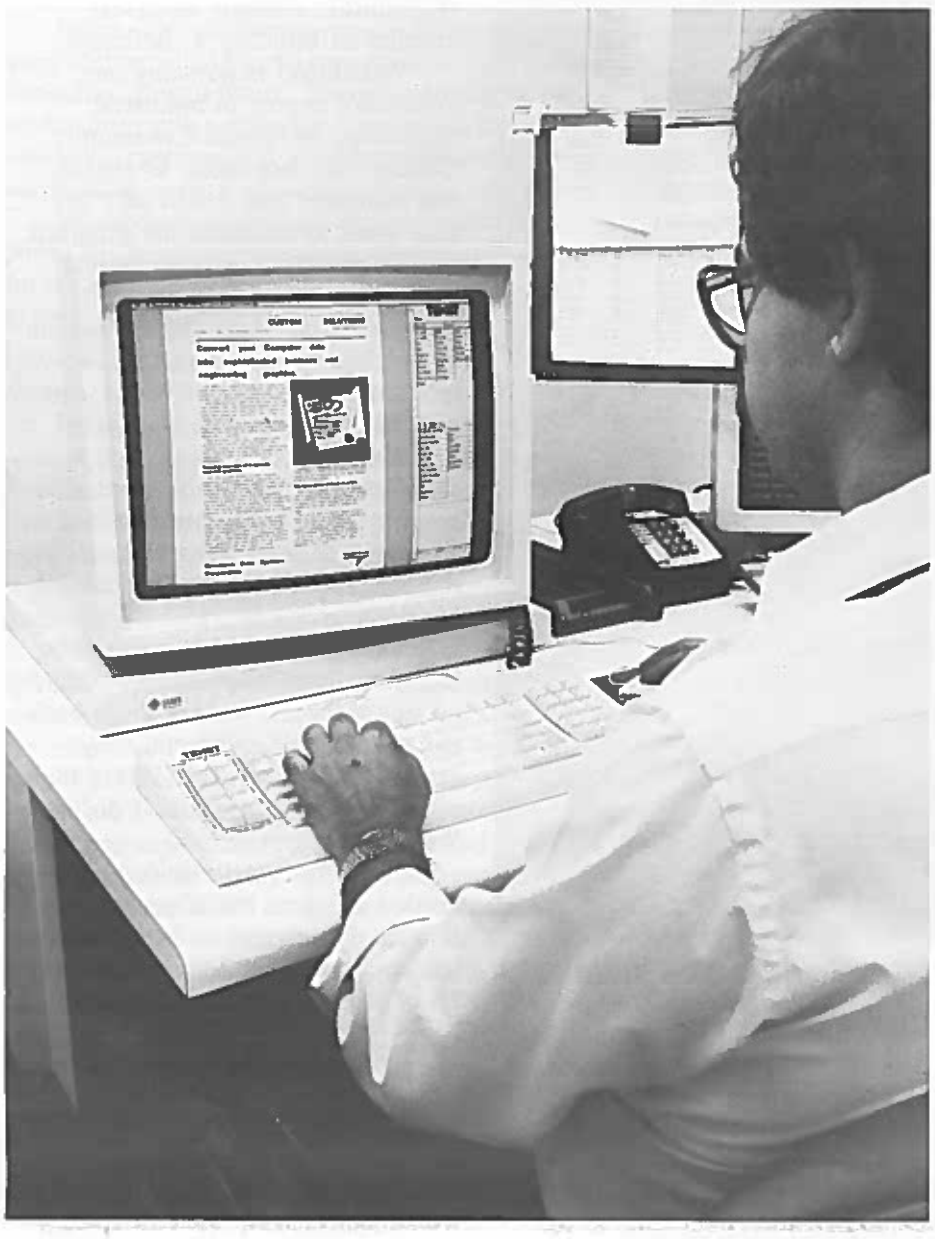
Both are considering going for their bachelor's degrees later on — "especially if Grumman is going to help pick up the tab," said Birsner.

For more information, contact your Personnel administrator or Lorraine Alfino at (516) 575-3734.■

A Master Student. *Thelma McClendon is a data analyst at Grumman St. Augustine. She used tuition reimbursement to obtain her bachelor's degree in business administration, and hopes to use it again when she pursues her master's.*

Finishing Off The Job. *While working as a senior electrical installer in Building 4, Lynda Wakulinski is attending Nassau Community College to earn an associate's degree in industrial technology. (Photos by Marie Trimborn)*

Got A Case Of 'Info Confusion?' InfoConversio



Meeting The Deadline. *Jan Geslak (above) checks copy on the Textet editing system before composition. InfoConversion uses a variety of electronic equipment to produce and update publications. Nancy Broggini (R) checks microfiche for clarity on a reader/printer. Strict quality control assures usability by the customer. John Lockamy (below) checks the input of the Imagitex system, which enters graphics into the computer database. (Photos by Bob Sagliocca)*

WOODBURY, Long Island — In the home entertainment field, the videodisc was one of the mistakes of the century. But its kissing cousin, the optical disk, is becoming the hit of the information industry.

Grumman's InfoConversion unit is transferring 1.3 million Uniform Commercial Code records to optical disk, as part of a contract with the New York Department of State. An optical disk system uses a laser-beam scanner to record information on a rotating disk, and then uses the same scanner to read it.

As its name denotes, InfoConversion specializes in changing information from one medium to another. Its mainstays are electronic publishing and computer-output microfilm. The optical disk is one of the newer items on its menu of services.

"Many organizations are buried under a mountain of paper," says George Devine, InfoConversion president. "We can help them manage their information better, whether through electronic publishing, micrographics, or one of the new optical media.

"We're not married to a particular technology or type of equipment," adds Devine. "That lets us pick and choose the right way to go for a project."

As a part of Grumman Data Systems, InfoConversion's roots go back to the late Sixties and a computer output microfilm product line developed for the Lunar

'It's easier to look through three or four fiche than a 1,000-page printout.'

Module program. InfoConversion later helped produce aerospace technical manuals. This was the start of its electronic publishing business, which now accounts for the majority of its sales. It began marketing its services outside Grumman in 1971, and now has about 90 people.

Electronic publishing is InfoConversion's fastest growing business. This is a method of preparing a journal, directory or manual from a master database. Previously typewritten or typeset text and graphics can be entered directly into the database using optical character recognition systems. Each item is assigned a numerical code: the computer can sort through these to make up a special edition.

The technology is especially useful for frequently updated publications and those that have offshoots. One major InfoConversion customer, the National Video Clearinghouse, publishes the *Video Sourcebook* and a host of smaller spinoffs.

"There has to be a value in

'Even without taking storage into account, COM is a tremendous cost saver.'

retaining the original information," says Devine. "We wouldn't do *Time* magazine, for example. They put tremendous effort into getting those 100 pages out, but once it's over, they throw it away. You never update *Time:* each week a new magazine is created from scratch."

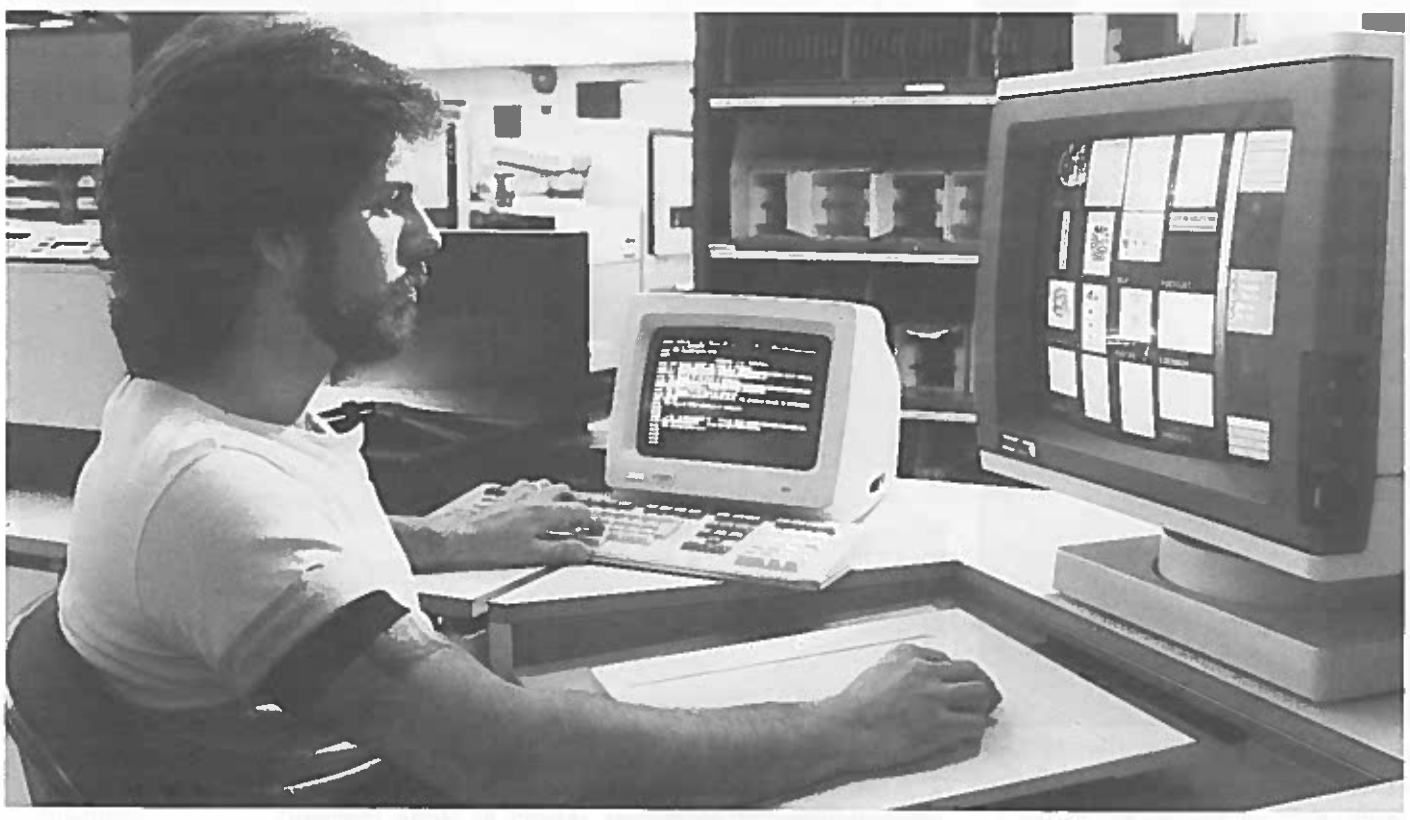
Here's a question that will stump even the most ardent players of "Trivial Pursuit": What is the biggest publisher in the United States? If you guessed Harcourt Brace Jovanovich or McGraw Hill, you're wrong. In terms of paper tonnage and copies, it's the U.S. Army.

InfoConversion is helping the Army improve the way it publishes and updates about 1,400 administrative publications. The program is called Update 400-S, and is the largest of InfoConversion's electronic publishing contracts.

Previously, when the Army revised a regulation, copy had to be typeset and then laid out manually. When the revised regulations arrived at their many destinations, they had to be manually inserted in loose-leaf binders. For some regulations, there was no set revision schedule; they were easily lost. In the worst cases, court claims were filed by disgruntled personnel.

The Army determined that the Update 400-S program would save $62 million a year in labor costs. More important, it helps everyone have the right information when they need it.

The project is a joint venture between InfoConversion and Fry Communications of Mechanicsburg, Pennsylvania. InfoConversion handles the electronic end, from database to camera-ready copy; it produces 1,000 pages in an average week. Fry prints, binds and delivers



ı Can Help

the volumes.

InfoConversion also established an electronic mail system tying together 80 locations where regulations are revised and reviewed. "Since we're part of Grumman Data Systems, we can call on their engineers and systems

'We intend to go after optical disk work. It's a natural for us.'

analysts for help in developing systems like this," says Devine.

For an output alternative, the technical customer can choose an InfoConversion-developed technique involving aperture cards. An aperture card is an IBM card that contains a 35mm film of an engineering drawing. InfoConversion has developed a method of taking computer aided design (CAD) output and converting it directly to 35mm film for mounting on aperture cards.

"We are continuing to develop software to work with most CAD systems," says Devine. InfoConversion's newest aperture card customer is Bath Iron Works of Maine, one of the nation's premier shipbuilders.

While most of InfoConversion's publishing services are for companies outside Grumman, internal use accounts for over half of its computer output microfilm (COM) work — to the tune of about 10 million original pages or frames, and 40 million duplicates, each month.

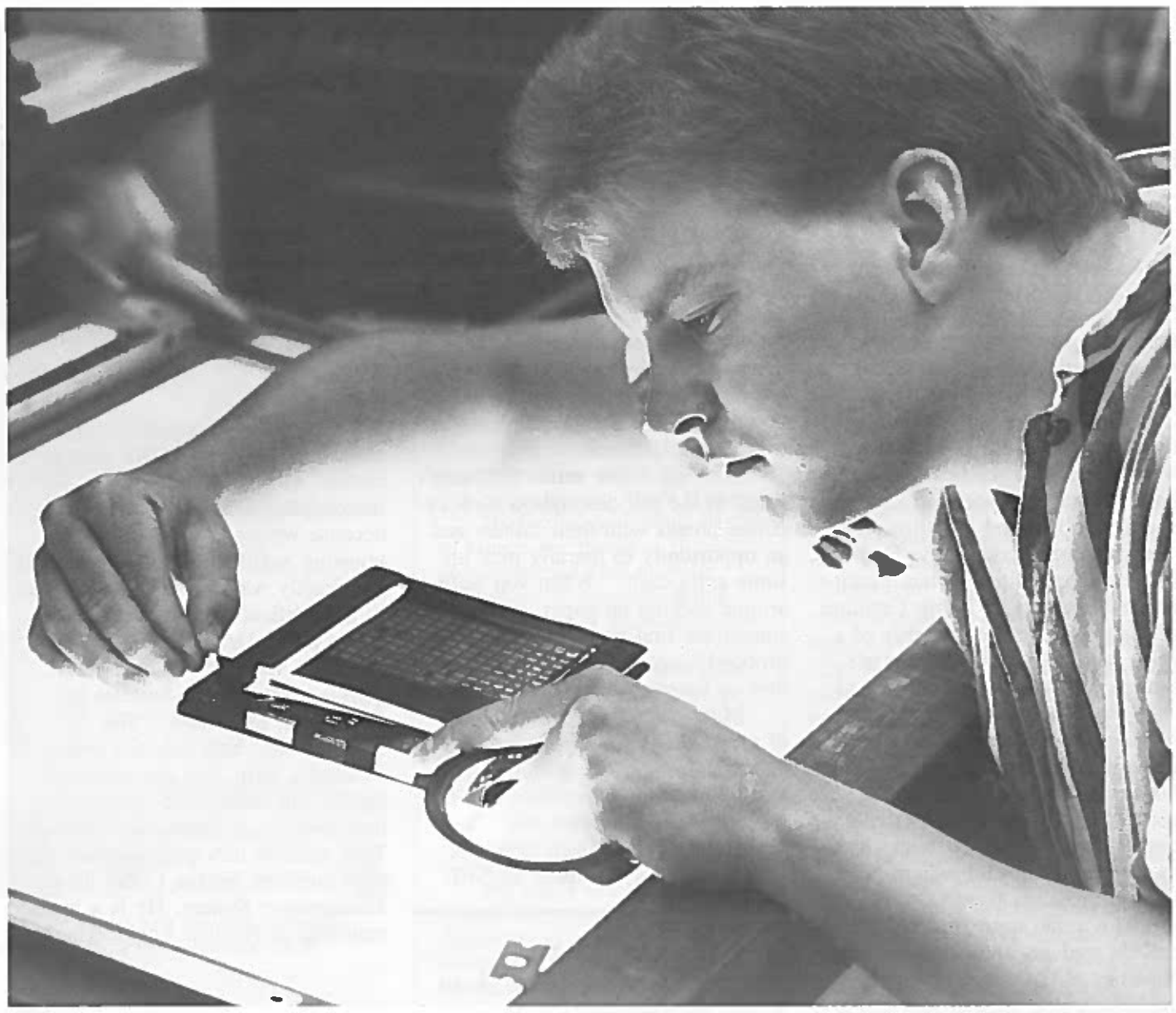
COM transfers computer data to microfiche: the equivalent of 270 of those green-and-white computer printout pages can fit on just one 4 x 6 inch microfiche. Data can be input to the COM system either by running a computer tape or through a direct link to the computer.

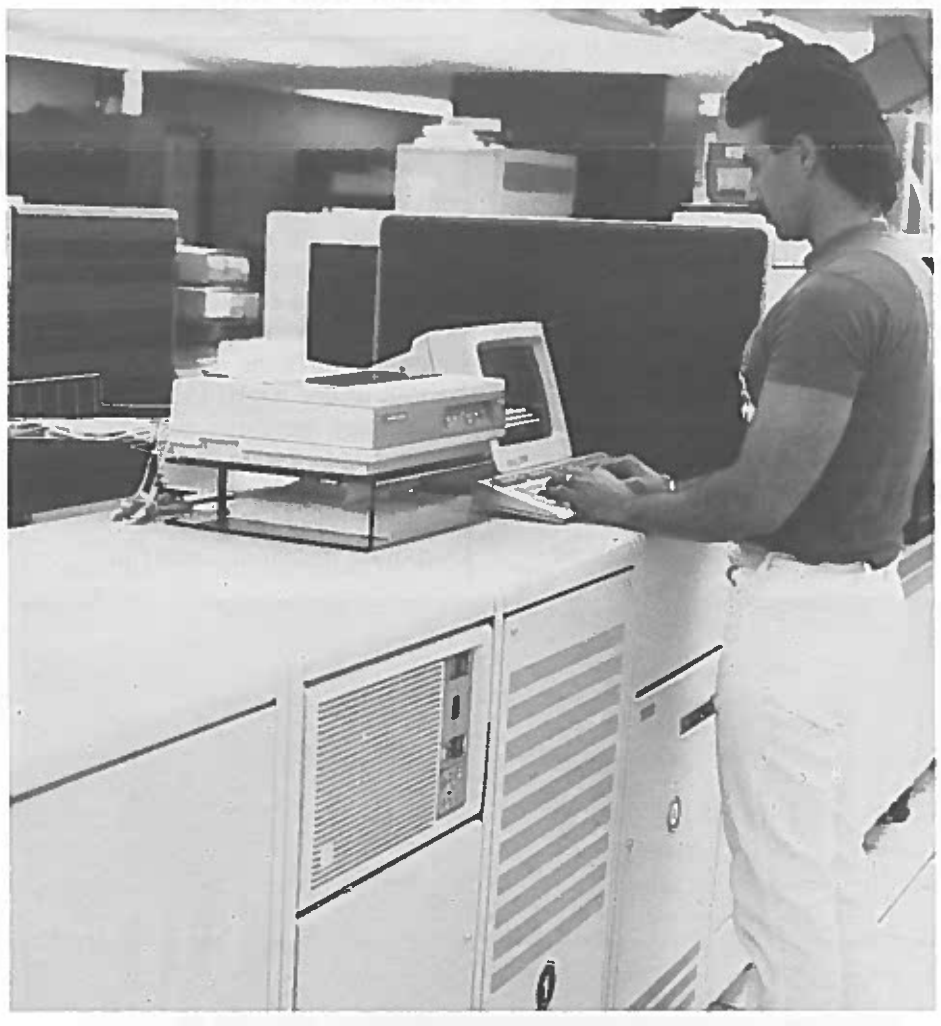
Inside Grumman, these are mainly accounting and other business records: for example, the

'We're not married to a particular technology or type of equipment.'

first significant application that was converted from paper to COM was the Master Inventory. It was converted to COM in 1974 and is still one of the largest applications, with over 36,000 original pages, and 30 copies, generated every other week.

The rest is divided among about 30 customers. These include small businesses, nonprofit concerns such as schools and hospitals, and a number of large companies. InfoConversion no longer pursues the Wall Street financial community for COM contracts, as a result of selling its New York City office. The unit made this move earlier this year, as a result of a management buyout.





Small Details. *Brian Fox (above) sets up a master fiche on a platen for duplication. Mike Belfiore (R) loads a composition job onto InfoConversion's VAX 8600 computer. (Photos by Bob Sagliocca)*

COM's most obvious benefit is in reducing paper and storage space costs — in some cases, up to 98 percent. In fact, the elimination of costly printout paper alone will usually pay for a COM service.

"But without even taking storage into account, it's a tremendous cost saver," says Devine. "The unit cost to have it on paper is about five times higher than on microfiche. That takes into account the cost of the equipment as well as the media cost. It's also easier to look information up through three or four fiche than to thumb through a 1,000 page computer printout."

InfoConversion plans to buck a trend of price-cutting in the COM industry. In industry surveys, the lowest priced companies in COM also have the poorest quality and turnaround times. InfoConversion sticks with high-resolution film stock, guarantees overnight turnaround, and relies on Grumman Systems Support to keep its equipment up and ready.

Devine doesn't expect the new optical and compact disk media to completely do away with microfilm. "Microfilm certainly never replaced paper," he says. "There's more paper now than there ever has been.

"Optical disk has been talked about for years, but there's just beginning to be a lot of activity in it," he adds. "Much of that is at the Federal and state level. We intend to go after it. We have an understanding of the technology and a good reputation to build on.

"It's a natural for us."■

Pass This One On

Grummanites are encouraged to let InfoConversion know of opportunities to sell its services. If you know people who would be interested, have them fill out this coupon and mail it to: Pat Molluso, vice president of marketing, InfoConversion, 280 Crossways Blvd., Woodbury, N.Y. 11797

Name: .....

Address: .....

Tel. No.: .....

Comments: .....

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Life's Not A Beach For Summer Employees

Summer job opening: Work for a major Fortune 500 company, get a great tan, no stringent dress code, opportunity to pick up extra cash.

This summer job is not mythical. Several college students working in the Facilities Department have a chance to work the ideal summer job — and they love it.

"It's pretty cool," says Dan Carpenter, a political science major at the University of North Carolina at Charlotte. He is a member of a grass cutting crew in Grumman's Bethpage complex on Long Island.

"I'm always out in the sun," says co-worker John Riehl, a ceramic engineering major at Alfred University in Alfred, New York. "I get to wear what I want — that's the best part of the job. I'd really hate to have a summer job where I'd have to dress up to go to work."

This year, approximately 1,200 college students applied for summer positions at Grumman. Every dependent who applied received a job offer. Of the 750 receiving job offers, 700 ultimately chose to join Grumman, including 60 engineering students who were hired for the summer and 60 Grumman scholars. The summer hire program was created primarily to provide a form of financial aid for Grummanites and their children. Summer employees often fill in for vacationing Grummanites.

Carpenter and Riehl admit that the program does have a drawback, but a very minor one. "You have to wake up by six o'clock in order to get to work by seven," says Carpenter.

The two students save about half their pay for college, and use the other half for spending money. They don't leave their jobs at work, either. "We get to mow the lawn at home, too. Our parents think we're experts," said Riehl.

Both see a few extras that aren't listed in the job description such as coffee breaks with their fathers and an opportunity to literally pick up some extra cash. "When you walk around picking up paper, you sometimes find cash that someone dropped," says Carpenter. So far, they've found about $12.

Money isn't everything. Many of the students who work for Grumman during the summer find that the learning experience is a big fringe benefit. "It gives you a new perspective to take back to school with you," says Elizabeth McNiff,

'It gives you a new perspective to take back to school with you.'

an electrical engineering major at Polytechnic University in Farmingdale, Long Island.

A Grumman scholar, McNiff completed her bachelor's degree in three years and is spending her fourth year pursuing her master's. She received a full tuition scholarship from Polytechnic, so Grumman gave the monetary portion of her award to an alternate. The money she earns over the summer is her spending money.

Currently, McNiff is working on image processing for the Corporate Research Center in Bethpage. "I take sensor data, which may contain a lot of noise, and use filtering techniques to extract the signal or image," says McNiff. She's still mastering the physics and math behind her work, as evidenced by the manuals lying open on her desk.

This is McNiff's fourth summer at Grumman. Her first summer, she drilled and riveted her way through small subassemblies. "It was an interesting summer," she says. "I was the only girl on the softball team at lunchtime."

While some students complain about not working in their area of choice, McNiff sees it as reasonable. "I think it's pretty fair because we really come in not knowing anything. The third year, I got exactly what I wanted. I worked in the artifical intelligence thrust group under Dr. Ivan Kadar."

Kurt McCarthy is glad to be working for Aircraft Systems in Glen Arm, Maryland. "The summer after high school I baled corn on a farm, and cut my hands up. So I'm happy with whatever they give me at Grumman," he says. This summer he's stamping tool dies with numbers for the Cutter Tool Management System. He is a junior majoring in Nuclear Engineering at Pennsylvania State University. Whenever he's not working at Grumman, he's flipping hamburgers at McDonald's.

Working for Grumman's Flight Test Center in Calverton gave Carmel Conaty a chance to clear up some doubts. "This job has really made me glad I chose mechanical engineering for my major," she says. Conaty attends Catholic University in Washington, D.C.

She works in the Propulsion Group in Building 7. Conaty takes raw data from F-14 engine tests, adjusts it to account for outside factors, and plots it out onto graphs. She also put together a handbook on how to use "Keyplot," a program for plotting graphs on the VAX/VMS computer system.

"I thought that it would be hard to work with people who are all older than I am, but it isn't," says Conaty. "You get the benefit of their experience. They've also given me some good career advice."

The money she makes this summer will help finance her education. "I have two sisters going into college next year, so it's really important for me to help out with the tuition."

Theresa Wagner is also concerned with paying off her tuition bills. "Every paycheck I get goes towards the tuition," she says. Wagner is a junior at Michigan State University, where she majors in criminal justice. She is working for Allied's Grumman Olson unit in Sturgis, Michigan. Wagner is key punching time cards and working with inventory. "I like gaining a little bit of knowledge in different areas," she says. In addition to her job at Grumman, Wagner is a waitress on weekends.

Valerie Skala, an applied math/statistics and economics major at SUNY-Stony Brook, is working for the Business Operations department at Grumman Data Systems in Woodbury, Long Island. "This is my first 'real' job. It shows me what is actually going on in the business world," says Skala. For the past few summers, Skala has worked in restaurants and taught swimming to young children.

This summer, she's updating purchasing requisitions, personnel requisitions and balancing out the account budgets.

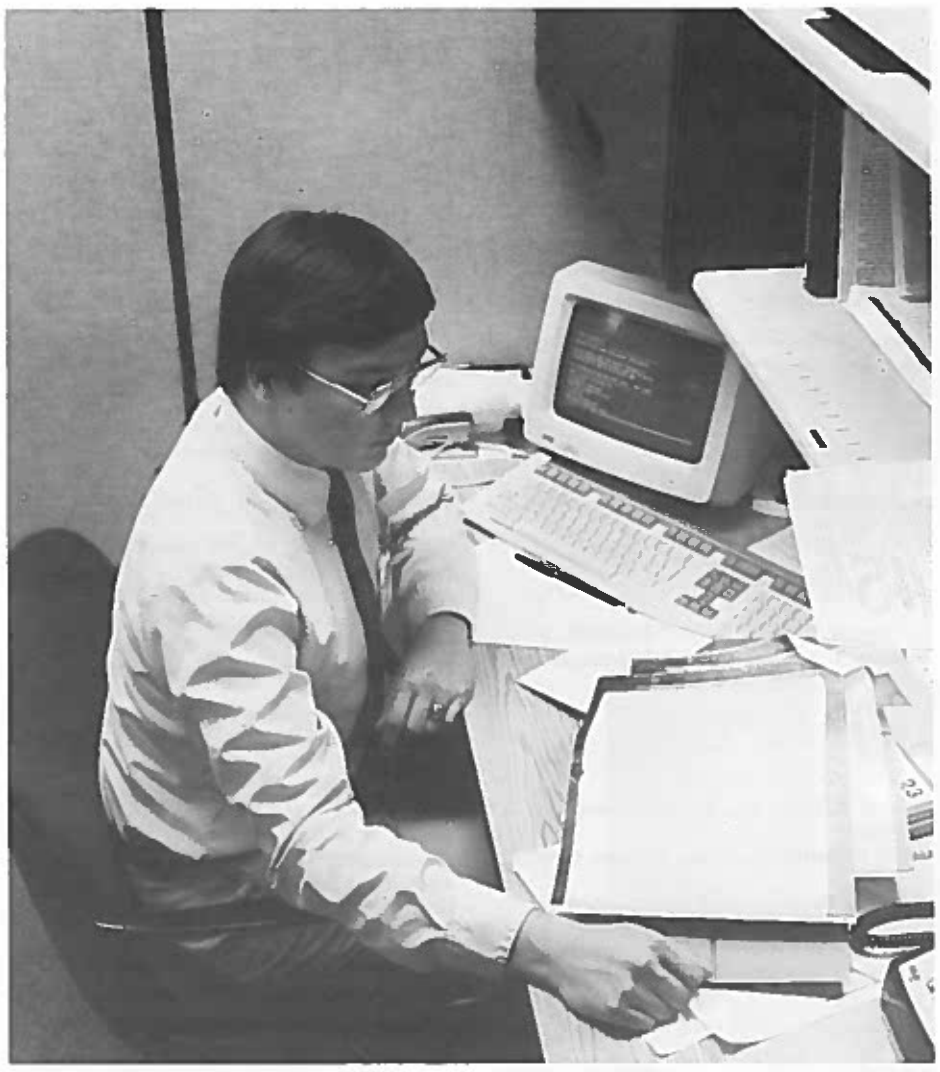
Raymond Loy is another Data Systems summer employee working in Woodbury. "I'm working on a robotic path planning algorithm that will decide how to move a robotic arm from one place to another without hitting anything and minimizing the amount of joint movement," he says.

Loy, a Grumman scholar, has worked four summers at Grumman. "The first summer I pounded sheet metal in Building 2. That summer in the shop turned out to be invaluable because it's a part of the company that I wouldn't ordinarily get to see," says Loy.

Loy finished his bachelor's degree in computer science at Columbia University in three years instead of the customary four. He plans to earn a master's degree in the same field from Rensselaer Polytechnic Institute.

A Little Bit Of This, A Little Bit Of That. *As a summer employee at Grumman Data Systems, Valerie Skala finds herself doing 'a little bit of everything,' including updating purchasing and personnel requisitions.*

The Outdoor Perspective. *Summer student Dan Carpenter helps mow the lawns at Grumman.*



How Will It Work? *Raymond Loy is working on algorithms that will determine how a robotic arm will move. Loy is a summer employee at Grumman Data Systems.*

Loy finds that the work he does at Grumman can help with his school work. "A lot of the work I did last year in artifical intelligence graph search techniques was very useful in one of my courses last year," he says.

Even though he received a Grumman scholarship, Loy uses all his summer earnings to pay the tuition bill. "The scholarship money only covered about a third of my bill," he says. The cost for a year at Columbia is approximately $17,000, and Rensselaer charges $356 per credit hour for graduate students.

Stefanie Bloomingdale works for the Grumman St. Augustine Division. She does secretarial work from typing to data processing. "I'm a general, all-around go-fer," she says. "My typing skills are improving considerably, and I'm learning a lot working on the computer." Bloomingdale is a sophomore at Grays Harbor College in Aberdeen, Washington. She majors in science.

When the fall comes, the students will head back to their colleges. If all objectives are met, they will return to campus with their wallets a little fatter and an entry on their resumes. ■

Computer-generated Pictures. *Elizabeth McNiff, a summer employee in the Research Department, is learning how to do image processing. McNiff must screen noise out of the signals to create the desired clear picture.*

Obituaries

Dorothy Treutle of Administration, Melbourne, Melbourne Systems Division, died June 10 at the age of 61. She had been with the company since 1969 and resided at 3211 North 72nd Way, Fort Lauderdale, Fla.

Personals

My family and I would like to express our deepest thanks and appreciation to all our friends and co-workers for their kindness and sympathy shown during the recent loss of my brother. **Shari Winter**

My family and I would like to express our thanks to all my co-workers and ESO for their expressions of sympathy during the recent loss of my mother. **Joel Hindin**

I wish to express my sincere thanks and appreciation to all my friends and ESO for your prayers and good wishes during my recent illness. Your kindness and thoughtfulness meant a great deal to me, and will be long remembered. God bless you. **Gene Lastorino**

My family and I wish to express our appreciation and thanks to our Grumman friends, co-workers and ESO for their thoughtfulness and expressions of sympathy and support during the recent loss of our mother. **Herb Silber and Family**

Retiree Obituaries

John Bohun of 18 Wishbone La., Wantagh, N.Y., died June 12, 1987. He retired in 1983.

Roy Haynes of 6 Raleigh Place, Roosevelt, N.Y., died June 12, 1987. He retired in 1987.

Thomas F. Heiser of 83 Laurelton Dr., Mastic Beach, N.Y., died May 14, 1987. He retired in 1977.

Gerard A. Hoey of 43-27 248th St., Little Neck, N.Y., died June 4, 1987. He retired in 1975.

Clinton C. Kemp of 54 Elvina Gardens, Toronto, Ontario, Canada, died May 22, 1987. He retired in 1980.

Egbert D. Knapp at Star Route, Box 79, Caroga Lake, N.Y., died June 1, 1987. He retired in 1973.

Edward McCrossen of 45 Audrey Ave., Plainview, N.Y., died June 14, 1987. He retired in 1984.

Kincaid McLaurin of 416 Barnhill Dr., Savannah, Georgia, died May 17, 1987. He retired in 1979.

Albert L. Moger of 36 River Rd., Sayville, N.Y., died May 22, 1987. He retired in 1969.

Stephen Murphy of 45 Aspinwall St., Westbury, N.Y., died June 10, 1987. He retired in 1968.

Charles Nadig of 3890 S. Nellis Blvd., Las Vegas, Nevada, died June 9, 1987. He retired in 1970.

Salvatore P. Nofi of 2261 Banchory Dr., Winter Park, Florida, died May 22, 1987. He retired in 1971.

Charles M. Poitras of 73 East Main St., Richmondville, N.Y., died June 8, 1987. He retired in 1975.

Bertrand F. Robinson of 3010 Grand Blvd., Baldwin, N.Y., died June 1, 1987. He retired in 1977.

Frank Sautkultis of 11 Albin St., Glen Cove, N.Y., died May 22, 1987. He retired in 1987.

Frank Szabo of 265 East John St., Lindenhurst, N.Y., died June 8, 1987. He retired in 1987.

John T. Vanta at Rt. 3, Box 363, San Benito, Texas, died May 25, 1987. He retired in 1977.

Don't Get Caught Short In 1988; File A W-4 Form

The new tax law requires that you submit a new W-4 form to Grumman before October 1, 1987.

If you do not file a new W-4 or the simpler W-4A form by the deadline, Grumman must withhold taxes from wages as if you are either single claiming one withholding allowance or married claiming two allowances — depending on whether you checked the "single" or "married" box on your most recent W-4 on file.

Although you must complete the new W-4 form before October 1, it is important that you complete it as soon as possible since you may be significantly affected by the new tax law. Your withholding — plus any estimated tax payments — should closely match your tax liability for the year.

The new W-4A form includes a simple worksheet which will help you determine the number of withholding allowances you should claim. These forms are available at all Employee Services offices; you should mail your Grumman-supplied W-4A or W-4 form as soon as possible to Personnel Records, E09-GHQ. If you do not use the Grumman-supplied form, it cannot be processed by Personnel Records and will be returned to you for additional information.

You can call the IRS Tax Forms/Publications toll-free number — 1-800-424-3676 — for free copies of the following booklets:

"Tax Withholding and Estimated Tax" (Publication 505), "Highlights of 1986 Tax Changes (including the Tax Reform Act of 1986)" (Publication 553), and "Is My Withholding Correct?" (Publication 919). ■

Retirees

On behalf of our fellow workers, *Grumman World* salutes the following Grummanites for their contributions to the company and wishes them well in their retirement. Those who have recently retired are:

Dorothy M. DeFrancisco (44), Harry J. Newman (40), Lorraine H. Vogel (5), Walter Kulbaba (121), Mafalda M. Rigolini (GHQ), Albert A. Benesch (2), William McSteen (6), Charles J. Lewandowski (110), Gerald Windus (1), James Donohue (2), John Galligan (3), Robert H. Kirschenheiter (4), John A. Tosto (5), Arthur G. McCable (30), John V. Neverka (9), Charles E. Hess (2), George F. Bonanza (66), Florence G. Crevoiserat (3), Donald T. Graham (43), Theresa A. Seip (15), William J. Sommers (12), William F. Pells (20), Harvey Weinschenk (43), William Pascucci (43), Florence Sprague (43), Edith Sundman (25), Kenneth Gray (289), John W. Herlihy (2), Virginia L. Jagoe (30), Margaret I. Kolody (44), Edwin F. Black (30), Clarence W. Townsley (56), Carolyn O. Bottcher (5), Harry Belsha Jr. (2), Joseph T. Colucci (1), William Fehrs Jr. (5), Glen O. Kerrebrock (1), Howard E. Matthews (1), George M. Myers (25), Donavon W. Haines (1), Robert R. Kalin (6), Howard W. Giller (7), Salvatore A. Gambitta (1), George J. Jongebloed (12), Thomas B. Cybulski (3), Guido LoDolce (9).

N. D. Avanzo

H. Brodman

H. R. Buthmann

H. R. Clary

G. A. Collora

L. A. Corrao

R. Cronk

E. J. DePinter

K. O. Dewey

L. L. Elms

A. N. Ferragamo

R. Franke

M. J. Goupill Jr.

L. J. Grizlo

R. B. Johnson

L. Katz

W. J. Kelly

W. J. Ketchum Jr.

H. B. Kuhn

I. W. Laurence Jr.

Service Milestones

45

Anthony T. Messina, Aircraft Systems, Bethpage

40

William R. Berge Jr., Aircraft Systems, Bethpage
Victor DiMattia, Electronics Systems, Great River
Arthur F. Drake, Aircraft Systems, Bethpage
Theodore A. Kerpez, Aircraft Systems, Calverton
Anthony J. Way, Aircraft Systems, Bethpage

35

Gilbert R. Anderson, Aircraft Systems, Bethpage
Rudolph L. Brochhausen, Aircraft Systems, Bethpage
Salvatore M. Buonincontro, Services, Bethpage
Fred J. Calfior, Aircraft Systems, Bethpage
Ronald W. Cerreta, Aircraft Systems, Melville
Angelina Conklin, Aircraft Systems, Bethpage
Frank DeRosa, Aircraft Systems, Bethpage
Anthony Ficarrotto, Aircraft Systems, Bethpage

30

Louis J. Agiesta Jr., Electronics Systems, Great River
Rudolf Bernstein, Aircraft Systems, Melville
Ignazio Biamonte, Technical Services, Titusville
Robert E. Boisits, Aircraft Systems, Bethpage
Joseph J. Brandt, Aircraft Systems, Calverton
George A. Brittain Jr., Aircraft Systems, Bethpage
Robert A. Brooks, Aircraft Systems, St. Augustine
Rosemary Caleca, Aircraft Systems, Bethpage
Gordon W. Cargill, Electronics Systems, Great River
Joseph V. Consavage, Aircraft Systems, Bethpage
Clarence F. Crosby Jr., Services, Bethpage
John E. Cunniff, Aircraft Systems, Bethpage
David P. Detlefsen, Aircraft Systems, Bethpage
Leroy Duryea, Technical Services, Bethpage
Robert J. Falkowski, Aircraft Systems, Stuart
Edmour J. Gagnon Jr., Aircraft Systems, Calverton
Matthew W. Gallagher, Aircraft Systems, Pt. Mugu
Kenneth Garrett, Aircraft Systems, Melville
Edward A. Gross, Aircraft Systems, Calverton
George W. Hempel, Aircraft Systems, Bethpage
Ilmars A. Hofmanis, Electronics Systems, Melville
Kenneth Hubbard, Electronics Systems, Great River
Allen J. Johnson Jr., Aircraft Systems, St. Augustine
Raymond W. Johnson, Technical Services, San Diego
Peter King, Aircraft Systems, Calverton
Peter Koland Jr., Aircraft Systems, Bethpage
John E. Minett, Aircraft Systems, Bethpage
Donald G. Nelson, Aircraft Systems, Calverton
George B. Patterson, Aircraft Systems, Bethpage
Edward C. Quinn, Aircraft Systems, Calverton
John M. Raad, Aircraft Systems, Bethpage
Cipliano Rappa, Aircraft Systems, Stuart
Richard P. Schlegelmilch, Aircraft Systems, Bethpage
Chester W. Senig Jr., Aircraft Systems, Bethpage
Joseph J. Smitelli, Aircraft Systems, Stuart
Joseph E. Stapleton, Aircraft Systems, Bethpage
John W. Stecker, Aircraft Systems, Calverton
Franz A. Winnes, Aircraft Systems, Bethpage
Clifford E. Wright, Aircraft Systems, St. Augustine

Louis J. Gasser Jr., Aircraft Systems, Bethpage
Philip W. Genthner, Electronics Systems, Melville
Lawrence J. Keenan, Aircraft Systems, Calverton
Raymond W. Kelton, Aircraft Systems, California
Charles G. Kennington, Aircraft Systems, Calverton
Edward Liencicki, Aircraft Systems, Bethpage
Robert M. Morell, Aircraft Systems, Bethpage
Anthony Munno, Aircraft Systems, Bethpage
Ronald P. Neilsen, Aircraft Systems, Bethpage
Albert Pennetti, Aircraft Systems, Bethpage
Anthony M. Prezioso, Aircraft Systems, Bethpage
Philip F. Ragozzino, Services, Bethpage
James T. Scanlon Jr., Aircraft Systems, Calverton
Paul A. Scudieri, Aircraft Systems, Bethpage
John Sposito, Aircraft Systems, Bethpage
Patrick H. Sullivan, Melbourne Systems, Melbourne
Anthony S. Taibi, Aircraft Systems, Milledgeville
George P. Turney, Services, Bethpage
Zelig Witkin, Aircraft Systems, Melville

Step by Step with FSAs

If you're covered under the Grumman/Travelers Insurance Plan and you've set up a flexible spending account for your family's health care in 1987, how do you draw on your 1987 flexible spending account?

Here's a step-by-step rundown:

- Rule no. 1 is save all your original bills. No copies will be accepted by Travelers. Claims should always be sent first for reimbursement under all available insurance coverages.
- After you have submitted your claim form and original bills to Travelers, you may draw on your flexible spending account for any unreimbursed out-of-pocket expenses.
- Pick up an FSA claim form at your local Employee Services (ES) office or at the Insurance office in Grumman Headquarters. This is a special claim form that is used to submit claims to Travelers under the FSA program.
- Attach your Explanation of Benefits (EOB) which you received from Travelers to the FSA form and you will be reimbursed for the expenses not covered by the carrier. (For example, the $250 deductible, any co-insurance, etc.)
- If you have a claim which is not covered by your health carrier, a paid itemized bill and the FSA claim form is all you need for reimbursement.
- How often can you request reimbursement of your FSA? Travelers will only reimburse claims in excess of $100 and only once a month. You should try to "batch" your bills and submit reimburseable amounts. Of course, at year's end, any amount will be paid to avoid forfeiture of your remaining FSA money.
- Under the FSA program, you cannot submit an unpaid bill to Travelers and have them pay for the services directly. Unlike the insurance contract, the FSA arrangement is only permitted to reimburse paid bills.
- You should mail your FSA claim form to: Grumman Claims, The Travelers Insurance Company, 90 Merrick Avenue, East Meadow, N.Y. 11554. Or you can mail your FSA claim form to the Grumman Insurance Office, C14-GHQ, by using a special interoffice claims envelope (available at all ES offices).

Strike Up The Band

The Grumman Employees Concert Band has announced its 1987 summer tour. All shows begin at 8 p.m. The band will perform at the following places:

Thursday, July 16
Bethpage Community Park

Friday, July 17
Village Green in Stony Brook

Thursday, July 23
Bayshore Marina Park

Wednesday, July 29
Bald Hill Cultural Park, Farmingdale

Thursday, July 30
Rain date, Bald Hill

For more information, contact Bill Penza, Ext. (111) 51077.

Taking A Bite Out Of PC Course

Grumman Data Systems Institute has a special deal for Grummanites. Its 32-hour personal computer course, beginning July 27, is $395 — $100 off the regular price.

The course, which begins July 27, will cover: Introduction to the IBM PC; Introduction to Basic; Lotus 1-2-3, WordStar and dBase II.

Classes will be given at the Woodbury campus on Mondays, Wednesdays and Thursdays, 6-10 p.m. To register, call the Admissions office, (516) 682-5080.

C. R. Layne

F. J. Logiudice

D. J. McColgan

E. H. Miller

E. P. Mollik

W. C. Obertthorn

F. D. Olivo

J. P. Perrotta

R. Poupard

D. J. Ragas

E. A. Ross

W. H. Sachau

R J. Smith

R. H. Stark

J. T. Strong Jr.

G. W. Tasoulias

G. W. Temme

R. A. Torres

J. L. Ulmer

J. L. Vokral

R. C. Wilson

C. J. Witt

L. A. Wolfschmidt

S. E. Wyszomierski

W. W. Zepf

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Nicholas D. Avanzo, Electronics Systems, Great River
Michael D. Baryk, Aircraft Systems, Bethpage
Robert L. Booth Jr., Aircraft Systems, Bethpage
Henry Brodman, Aircraft Systems, Melville
Ronald G. Burk, Aircraft Systems, Melville
Henry R. Buthmann, Aircraft Systems, Calverton
Samuel C. Campbell, Melbourne Systems, Melville
James S. Childress, Electronics Systems, Great River
Harold R. Clary, Aircraft Systems, Melville
George A. Collora, Aircraft Systems, Bethpage
Louis A. Corrao, Services, Bethpage
Robert Cronk, Aircraft Systems, Melville
Edmund J. DePinter, Aircraft Systems, Melville
Karl O. Dewey, Aircraft Systems, Bethpage
Lester L. Elms, Aircraft Systems, San Diego
John J. Ettinger, Melbourne Systems, Melville
Anthony N. Ferragamo, Aircraft Systems, Bethpage
William L. Flynn, Services, Bethpage
Robert Franke, Aircraft Systems, Bethpage
Maurice J. Goupill Jr., Aircraft Systems, Calverton
Lester J. Grizlo, Aircraft Systems, Melville
Richard B. Johnson, Electronics Systems, Salisbury
Leon Katz, Aircraft Systems, Bethpage
William J. Kelly, Aircraft Systems, Melville
Herbert J. Kessler, Electronics Systems, Great River
Warren J. Ketchum Jr., Aircraft Systems, Calverton
Henry B. Kuhn, Aircraft Systems, Calverton
Irvin W. Laurence Jr., Aircraft Systems, Bethpage
Charles R. Layne, Aircraft Systems, Bethpage
Frank J. Logiudice, Aircraft Systems, Bethpage
Louis J. Majore, Data Systems, Bethpage
David J. McColgan, Aircraft Systems, Bethpage
Eugene H. Miller, Aircraft Systems, Bethpage
Emil P. Mollik, Aircraft Systems, Calverton
Robert G. Myer, Melbourne Systems, Melbourne
William C. Obertthorn, Aircraft Systems, Melville
Francis D. Olivo, Data Systems, Bethpage
Harry Pardo, Aircraft Systems, Bethpage
Justin P. Perrotta, Aircraft Systems, Bethpage
Richard Poupard, Aircraft Systems, Calverton
Donald J. Ragas, Aircraft Systems, Bethpage
Elaine A. Ross, Grumman Corporation, Bethpage
Harold A. Roth Jr., Aircraft Systems, Melville
William H. Sachau, Aircraft Systems, Pt. Mugu
Anthony F. Savona Jr., Aircraft Systems, Bethpage
James R. Selva, Aircraft Systems, Calverton
Rufus J. Smith, Aircraft Systems, Bethpage
Robert H. Stark, Aircraft Systems, Bethpage
Joseph P. Strigaro, Aircraft Systems, Bethpage
John T. Strong Jr., Aircraft Systems, Calverton
Gus W. Tasoulias, Aircraft Systems, Melville
George W. Temme, Aircraft Systems, Bethpage
Robert A. Torres, Services, Bethpage
John L. Ulmer, Aircraft Systems, Bethpage
Athanasios Vasilopoulos, Aircraft Systems, Bethpage
Joseph L. Vokral, Aircraft Systems, Bethpage
Robert G. Walsh, Aircraft Systems, Norfolk
Robert C. Wilson, Services, Bethpage
Christopher J. Witt Jr., Aircraft Systems, Bethpage
Leo A. Wolfschmidt, Aircraft Systems, Calverton
William T. Wright, Electronics Systems, Great River
Salvatore E. Wyszomierski, Aircraft Systems, Bethpage
Walter W. Zepf, Aircraft Systems, Bethpage

Note: In recent months, changes have been made in several department names in various Grumman divisions. Company computers are still sorting these changes out. For that reason, this month's computer listing of Grummanites who celebrated service anniversaries does not contain individual department names.

People

In Memory Of Chuck

Shannon Hankins, a recent graduate of Marietta High School in Marietta, Oklahoma, has received the first Charles "Chuck" Sewell Memorial Scholarship Award. Sewell, a Marietta graduate, was chief test pilot at Grumman; he died in a plane crash last summer.

His widow, Bonnie Sewell, and daughter, Cynde Sewell-Bell, presented the award at the high school graduation ceremony. Hankins is a private pilot and an airman in the Oklahoma National Guard. He has built his own plane and is working on a second one. President of his class, Hankins will attend Texas A&M to study biomedical engineering. He has also applied to the Air Force for pilot training.

Contributions to the annual scholarship fund can be made to: Charles A. Sewell Memorial Scholarship, c/o Mr. Joseph Banks, Superintendent of Schools, Marietta, Oklahoma 73448.

Teaching Teachers

A professor at Georgia College is sending graduate students to summer school at Aircraft Systems' advanced composite manufacturing facility in Milledgeville, Georgia.

Grumman is one of seven local businesses that are work sites for Georgia College, as part of a graduate course for teachers of business education from local high schools.

"Grumman has been our most successful work site," says Dr. Kaye Bloodworth, associate professor in the department of Business Information Systems and Communications.

A teacher from Putnam County High School, and another from Georgia Military College's prep school, recently spent five half-days in the Grumman plant. They got a feel for everything from the use of facsimile machines in the office to personal computers in the engineering and manufacturing world.

"A lot of teachers have never worked in industry," says Wendell Barr, personnel supervisor in Milledgeville. "We wanted to help expose them to the kinds of things we do here." The visiting teachers spent time in Personnel, Finance, Engineering, Program Coordination and Manufacturing.

"It's especially important for new teachers to get as much hands-on experience as possible, so they can take that knowledge back to their classrooms and share it with their students," says Dr. Bloodworth.

"What my students did at Grumman is so much more meaningful than what I could do with them in the classroom, especially in the area of business machines because the technology changes so rapidly," she adds.

Fine Fellow

Grummanite Charles Weizenecker has been named a fellow in the Society for the Advancement of Material and Process Engineering (SAMPE). A past president of the professional society, Weizenecker is section head of Material Engineering in Building 12, Bethpage. Weizenecker will be honored at SAMPE's 19th International Technical Conference in October.

Only 30 scientists and engineers have been named fellows in the 45-year history of SAMPE. The organization has over 8,000 members in the United States, Canada, Europe and Japan and is forming a chapter in Australia. Their objective is to further material science education and to share their knowledge of materials, particularly advanced composites.

Charles Weizenecker

Where's My *Grumman World?*

As with any publication, distribution can be a problem and *Grumman World* is not immune to snarls in its distribution system.

The corporate newspaper is published twice a month on the second and fourth Fridays. Due to holidays, sometimes this schedule slips, as it does this month when the *Grumman World* staff takes its vacation.

All Long Island sites receive the paper through the mail rooms on the day it's published. If your department is not receiving enough copies, contact your local mail room.

Grumman World is shipped via Parcel Post to all other Grumman locations. Normal delivery takes about two to three days. If your facility is not receiving enough copies or the delivery is late, please call Bernadette Gately, (516) 575-4334.

All retirees receive their papers via bulk-rate mail. Delivery can range from three to 10 days depending upon the Postal Service. If you are a retiree who recently moved, please write to us and enclose your new and old addresses. Please include your new and old ZIP codes. Our address is *Grumman World*, A27-GHQ, Grumman Corporation, 1111 Stewart Avenue, Bethpage, N.Y. 11714. It usually takes six weeks to incorporate a change in the mailing list.

Let Us Know

We don't want to do all the talking.

We'd like to know what you think about the things you see in these pages, and what you see going on in the company. Serious comments, questions and complaints are welcomed, and will be answered by the people most qualified to respond.

We'll get back to you promptly with their replies. If the topic is of general interest, we'll print it.

Letters to the editor should be addressed to *Grumman World*, 1111 Stewart Avenue, A22-GHQ, Bethpage, N.Y. 11714, and should include your name and address. Letters may be edited for clarity or space.

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GrummanWorld
July 10, 1987

(Photo by Rich Breunig)

Chamber Of The STARS

Grumman recently wrapped up a six-month test program in Building 14's anechoic chamber for the Joint Surveillance Target Attack Radar System (Joint STARS). Patrick Mulhern, assistant engineer, is shown testing communications antennas on an E-8A 1/20th scale model in the anechoic chamber in Bethpage. The E-8A is a modified Boeing 707.

The five-year $657 million Joint STARS contract is with the Air Force's Electronic Systems Division, but is being funded jointly by the Army and the Air Force. The new airborne surveillance system will detect, locate and classify ground targets and help guide aircraft and missiles against enemy armored and support forces.

Full-scale development of Joint STARS is being performed by the Grumman Melbourne Systems Division, headquartered in Melbourne, Florida.